REMARKS

Claims 1-20 are pending in this application with claim 7 being amended by this response. Claim 7 has been amended for purposes of clarification in response to comments of the Examiner. It is respectfully submitted that no new issues have been raised by this amendment.

Objection to the Abstract

The Abstract has been objected to for lacking proper format. The Abstract has been amended in accordance with the comments of the Examiner to be in the form of a single paragraph. In view of the amendments to the Abstract is respectfully submitted that this objection is satisfied and should be withdrawn.

Rejection of Claim 7 under 35 USC § 112, second paragraph

Claim 7 has been rejected under 35 USC § 112, second paragraph, as being indefinite.

Claim 7 has been amended, in accordance with the comments of the Examiner, to remove the unclear term. Claim 7 has further been amended to clarify that the data retransformed into the frequency domain is in fact the mixed blocks. This is apparent as the claim describes that while "allocate(ing) to each pixel of the mixed block the resolution which corresponds to its zone... the data of the frequency domain are retransformed into the spatial domain...resolutions (are allocated)...(and) data are retransformed into the frequency domain". The allocations of resolution are made to each pixel of a mixed block, it is this mixed block that is "retransformed into the frequency domain". Therefore, as the amendments to claim 7 were made solely for purposes of clarification, it is respectfully submitted that no new issues have been raised by this amendment. In view of the amendments to claim 7 it is respectfully submitted that this objection is satisfied and should be withdrawn.

Rejection of Claims 1, 3, 5-6, 8-10 and 19-20 under 35 USC § 102(e)

Claims 1, 3, 5-6, 8-10 and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Katata et al. (US Patent No. 6,088,061).

The present claimed invention recites a process for the blockwise coding of digital video images. Each block is assigned a specified resolution, which is dependent on a zone in which this block is located. An image which includes at least two zones to which different resolutions are assigned is characterized in that the mixed blocks straddling two zones of different resolutions are detected. The zone corresponding to each pixel of these mixed blocks is determined so as to construct mixed blocks by allocating the resolution of this specified zone to this pixel to get constructed mixed blocks and to code the constructed mixed blocks.

Katata et al. neither disclose nor suggest a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

Katata et al. describe a video coding device which is capable of making coded data have a hierarchical structure wherein a specified area of each frame is selected. The position and shape of the selected area is encoded and a pixel value of the selected area is encoded as slower-layer coded data. A pixel value of a whole image is encoded as first upper-layer coded data by using pixel values of already decoded images of the lower-layer and the first upper layer. A pixel value of the selected area is encoded as second upper-layer coded data by using pixel values of already decoded imaged of the lower-layer and the second upper layer.

"The background image and part images may be independently encoded... considering the background image as an lower-layer and the part images as upper-

layers... Each upper-layer image can be effectively encoded by predicting its pixel value from that of the lower-layer image" (Col. 17, lines 35-40). In respect to coding "the upper-layer coding portion has a frame rate higher than that of the lower-layer coding portion" (col. 18, lines 4-6). "The upper-layer coding portion 203 encodes...on the basis of an area information...The area information is information indicating a selected area of, e.g., an image of a human figure in each video frame" (Col. 18, lines 25-33).

The system described by Katata et al. is similar to the prior art discussed in the background of the present application. The prior art describes "reducing the resolution of zones of the image, referred to as background zones, considered to be less important than other zones, referred to as zones of interest, whose resolution is kept high, that is to say whose residual is transmitted in full... For example, in the case of an image representing a bird flying over a totally blue sky background, the resolution of the zone of the image corresponding to the sky can be decreased while retaining high resolution for the zone of the image relating to the bird without, in theory, impairing the overall quality of the image" (see Specification Page 4, lines 4-20). This is similar to the area information described by Katata et al. which indicates a selected image.

This process designates whole objects as selections to be encoded at a higher quality. However, "this processing does not always yield satisfactory results. Specifically, the images thus processed exhibit anomalies of resolution at the boundaries between the zone or zones of interest and the background zone or zones" (see Specification Page 4, lines 22-25). These resolution anomalies are due to block encoding of the boundaries between regions. Blocks lying on a boundary are assigned the characteristics of either the zone of interest or the zone of background. This characterization of boundary blocks distorts the boundaries between the zones of interest and the background.

The present invention corrects this distortion by locating the blocks which lie on the boundaries between the zones of interest and the background. These blocks are

then analyzed to determine to which zone each pixel belongs. Each pixel of that block is then assigned the value of its determined zone.

The Office Action asserts that Katata et al. disclose a video coding method equivalent to that of the present claimed invention. Katata et al. describe using area information to locate a selected area. This is unlike the present claimed invention which locates blocks straddling two zones. Katata et al. merely locate a desired object and the background. This is entirely unlike the present claimed invention which locates the boundary blocks between these two zones. Therefore, Katata et al. neither disclose nor suggest a process in which "mixed blocks straddling two zones of different resolutions are detected" as recited in claim 1 of the present invention.

Katata et al. describe a weighting function to be applied to a received image. The received image is in a block format wherein each block is assigned to a specific zone. When received the image is reconstructed according to the received blocks. Only after this process do Katata et al. perform their weighting function. This is entirely unlike the present claimed invention which receives blocks assigned to single and multiple zones. As Katata et al. are not concerned with the blocks assigned to multiple zones, Katata et al. are not concerned with re-encoding the blocks assigned to multiple zones, wherein for each pixel in the block it is determined to which zone it belongs. Therefore, Katata et al. neither disclose nor suggest a process in which "the zone corresponding to each pixel of these mixed blocks is determined" as claimed in claim 1 of the present invention. Similarly, as Katata et al. are not concerned with determining the zone of each pixel, Katata et al. are not concerned with the allocation of the determined zone to each pixel. Therefore, Katata et al. also neither disclose nor suggest "**allocating the resolution of this specified zone to this pixel** to get constructed mixed blocks" as recited in claim 1 of the present invention.

Furthermore, even when Katata et al. located the desired zones, Katata et al. encode the desired zone at a higher frame rate than that of the background. This is unlike the present claimed invention which encodes the desired dual-zone blocks pixel by pixel, each to their associated zone. The result of this re-encoding of the dual-zone

blocks is a block of higher resolution and not a block encoded at a higher frame rate. Therefore, Katata et al neither disclose nor suggest "to **code** said constructed mixed blocks" as recited in claim 1 of the present invention.

As claims 3, 5-6 and 8-10 are dependant on Independent claim 1 it is respectfully submitted that these claims are allowable for the same reasons discussed above regarding claim 1. In view of the above remarks it is respectfully submitted that claims 3, 5-6 and 8-10 are also allowable.

In view of the above remarks and amendments to the claims it is respectfully submitted that there is no 35 USC 112 compliant enabling disclosure in Katata et al. showing the above discussed features. It is thus further respectfully submitted that claims 1, 3, 5-6 and 8-10 are patentable over Katata et al. and that this rejection is satisfied and should be withdrawn.

Rejection of Claims 2, 11-17 under 35 USC § 103(a)

Claims 2, 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katata '061 in view of Li (US Patent Application No. 2002/0051488).

Li, similarly to Katata et al., neither disclose nor suggest a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

Li describes a generic spatially-scalable shape encoding apparatus for handling different mask decomposition methods. The generic spatially-scalable shape encoding apparatus applies three encoding steps to maximize the coding efficiency of the encoder. The three steps include mask mode encoding, base mask layer coding and enhancement mask layer encoding.

However, Li, similarly to Katata et al., is not concerned with locating blocks which contain pixels belonging to a first zone and pixels belonging to a second zone as in the present claimed invention. Therefore, Li neither discloses nor suggests a process in which "mixed blocks straddling two zones of different resolutions are detected" as recited in claim 1 of the present invention. As Li is not concerned with locating mixed blocks, Li, similarly to Katata et al., is not concerned with determining the zone of each pixel within the block as in the present claimed invention. Therefore, Li, similarly to Katata et al., neither discloses nor suggests "the zone corresponding to each pixel of these mixed blocks is determined" as claimed in claim 1 of the present invention. Additionally, Li, similarly to Katata et al., is not concerned with allocating the resolution of each pixel according to its corresponding zone as in the present claimed invention. Therefore, Li, similarly to Katata et al., neither discloses nor suggests "**allocating the resolution of this specified zone to this pixel** to get constructed mixed blocks" as recited in claim 1 of the present invention. Furthermore, Li is not concerned with encoding these mixed blocks at a higher resolution as in the present claimed invention. Therefore, Li, similarly to Katata et al., neither discloses nor suggests "**cod(ing)** said constructed mixed blocks" as claimed in claim 1 of the present invention.

The Office Action asserts that the combination of the systems of Katata et al and Li discloses the principles of the present claimed invention. However, the combined system, similarly to the individual systems of Katata et al. and Li, would not be concerned with the detection of mixed blocks, the allocation of the resolution of each pixel according to its corresponding zone and the coding of the mixed blocks as is the present claimed invention. Therefore, the combined system, similarly to the individual systems of Katata et al. and Li, would neither disclose nor suggest a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as

claimed in claim 1 of the present invention.

As claims 2 and 11-17 are dependant on Independent claim 1 it is respectfully submitted that they are allowable for the same reasons as discussed above in respect to claim 1. In view of the above remarks it is respectfully submitted that claims 2 and 11-17 are also allowable.

In view of the above remarks and amendments to the claims it is respectfully submitted that there is no 35 USC 112 compliant enabling disclosure in Katata et al. and Li, when taken alone or in combination, showing the above discussed features. It is thus further respectfully submitted that claims 2 and 11-17 are patentable over Katata et al. and Li, when taken alone or in combination, and that this rejection is satisfied and should be withdrawn.

Rejection of Claim 7 under 35 USC § 103(a)

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katata et al. in view of the admitted prior art.

As discussed above, neither Katata et al. nor the admitted prior art disclose or suggest a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

The Office Action asserts that Katata et al. disclose transforming data from a frequency domain to a spatial domain. However, Katata et al., as discussed above in regards to claim 1, are not concerned with the detection of mixed blocks, the allocation of the resolution of each pixel according to its corresponding zone and the coding of the mixed blocks as is the present claimed invention. Therefore, Katata et al. would neither disclose nor suggest a process wherein "**mixed blocks** straddling

two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

Additionally, the Office Action asserts that the admitted prior art, in particular Fig. 1, discloses allocating to each pixel of the mixed block the resolution of its corresponding zone. However, as discussed above in regards to claim 1, the process of the prior art designates whole objects as selections to be encoded at a higher quality using block encoding. This process exhibits "anomalies of resolution at the boundaries between the zone or zones of interest and the background zone or zones" (Page 4, lines 22-25). The present claimed invention corrects this distortion of the boundaries by locating the blocks which lie on the boundaries between the zones of interest and the background, analyzing them to determine to which zone each pixel belongs and assigning them the value of its determined zone. Therefore, the prior art, similarly to Katata et al., neither discloses nor suggests a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

The Office Action furhter asserts that the combination of the systems of the prior art and Katata et al. disclose the principles of the present claimed invention. However, similarly to the individual systems of the prior art and Katata et al., the combined system would not be concerned with correcting this distortion of the boundaries by locating the blocks which lie on the boundaries between the zones of interest and the background, analyzing them to determine to which zone each pixel belongs and assigning them the value of its determined zone. Therefore, the prior art, similarly to the individual systems of the prior art and Katata et al., neither discloses nor suggest a process wherein "**mixed blocks** straddling two zones of different

resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

As claim 7 is dependant in independent claim 1, it is respectfully submitted that claim 7 is allowable for the same reasons as discussed above in respect to claim 1. In view of the above remarks it is respectfully submitted that claim 7 is also allowable.

In view of the above remarks and amendments to the claims it is respectfully submitted that there is no 35 USC 112 compliant enabling disclosure in Katata et al. and the admitted prior art, when taken alone or in combination, showing the above discussed features. It is thus further respectfully submitted that claim 7 is patentable over Katata et al. and the admitted prior art , when taken alone or in combination, and that this rejection is satisfied and should be withdrawn.

Rejection of Claim 4 under 35 USC § 103(a)

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katata et al. in view of Jiang (US Patent Application No. 2002/0118743).

Jiang, similarly to Katata et al., neither discloses nor suggests a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

Jiang describes a post-clipping method in the coding system for fine granularity scalability (FGS) video coding. The FGS enhancement layer encoding and decoding operations can be mapped to simple motion compensation operations.

However, Jiang is not concerned with the detection of mixed blocks, the allocation of the resolution of each pixel according to its corresponding zone and the coding of the mixed blocks as is the present claimed invention. Therefore, Jiang, similarly to Katata et al., neither discloses nor suggests a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

The Office Action asserts that the combination of the systems of Katata et al and Jiang disclose the principles of the present claimed invention. However, the combined system, similarly to the individual systems of Katata et al. and Jiang, would not be concerned with the detection of mixed blocks, the allocation of the resolution of each pixel according to its corresponding zone and the coding of the mixed blocks as is the present claimed invention. Therefore, the combined system, similarly to the individual systems of Katata et al. and Jiang, would neither disclose nor suggest a process wherein "**mixed blocks** straddling two zones of different resolutions **are detected**, and the **zone** corresponding to each pixel of these mixed blocks **is determined** so as to construct mixed blocks by **allocating the resolution of this specified zone** to this pixel to get constructed mixed blocks and to **code said constructed mixed blocks**" as claimed in claim 1 of the present invention.

As claim 4 is dependant on Independent claim 1 it is respectfully submitted that they are allowable for the same reasons as discussed above in respect to claim 1. In view of the above remarks it is respectfully submitted that claim 4 is also allowable.

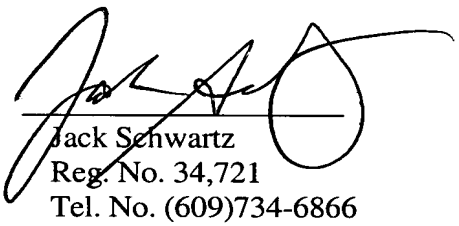
In view of the above remarks and amendments to the claims it is respectfully submitted that there is no 35 USC 112 compliant enabling disclosure in Katata et al. and Jiang, when taken alone or in combination, showing the above discussed

features. It is thus further respectfully submitted that claim 4 is patentable over Katata et al. and Jiang, when taken alone or in combination, and that this rejection is satisfied and should be withdrawn.

Having fully addressed the Examiner's rejections, it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the Examiner is invited to contact the applicant's attorney at the phone number below, so that a mutually convenient date and time for a telephonic interview may be scheduled.

No fee is believed due. However, if a fee is due, please charge the fee to Deposit Account 07-0832.

Respectfully submitted,
Anita Orhand et al.

By: 

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November 29, 2005

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